CLAIMS

1. A transceiver unit (TU) comprising:

- a receiver unit (RX) adapted to detect from a physical medium a first downstream handshake initiation signal (C-TONES) and a first upstream handshake initiation signal (R-TONES-REQ),
- a transmitter unit (TX) adapted to transmit over said physical medium a second upstream handshake initiation signal (R-TONES-REQ),
- a self identification module (SIM) adapted to identify said transceiver unit as a central unit or as a remote unit,

characterized in that said self identification module is coupled to said receiver unit and said transmitter unit, and is further adapted to:

- wait for detection of any of said first downstream handshake initiation signal and said first upstream handshake initiation signal within a first time interval (T1),
- request said transmitter unit to transmit said second upstream handshake initiation signal if none of said first downstream handshake initiation signal and said first upstream handshake initiation signal is detected within said first time interval, and wait for detection of said first downstream handshake initiation signal within a second time interval (T2),
- identify said transceiver unit as a remote unit upon detection of said first downstream handshake initiation signal within said first time interval or within said second time interval,
- identify said transceiver unit as a central unit upon detection of said first upstream handshake initiation signal within said first time interval.

2. A transceiver unit according to claim 1, characterized in that said receiver unit is further adapted to detect from said physical medium an upstream handshake confirmation signal (R-TONE1),

in that said transmitter unit is further adapted to transmit over said physical medium a second downstream handshake initiation signal (C-TONES),

and in that self identification module is further adapted to:

- request said transmitter unit to transmit said second downstream handshake initiation signal if none of said first downstream handshake initiation signal and said first upstream handshake initiation signal is detected within said first time interval, and wait for detection of said upstream handshake confirmation signal within a third time interval (T3),
- identify said transceiver unit as a central unit upon detection of said upstream handshake confirmation signal within said third time interval.

3. A transceiver unit according to claim 2, **characterized in that** said self identification module is further adapted to request said transmitter unit to transmit said second downstream handshake initiation signal if said first downstream handshake initiation signal is not detected within said second time interval.

4. A transceiver unit according to claim 2, **characterized in that** said self identification module is further adapted to request said transmitter unit to transmit said second upstream handshake initiation signal if said first upstream handshake confirmation signal is not detected within said third time interval.

5. A transceiver unit according to claim 1, **characterized in that** said self identification module is further adapted to wait for a random or pseudo-random period of time if none of said first downstream handshake initiation signal and said first upstream handshake initiation signal is detected within said first time interval, and if said first downstream handshake initiation signal is not detected within said second time interval.

6. A transceiver unit according to claim 1, characterized in that a length of any of said first time interval or said second time interval is a random or pseudo-random number.

7. A transceiver unit according to claim 1, characterized in that said transceiver unit is a digital subscriber line transceiver unit, and in that said first downstream handshake initiation signal is a C-TONES signal according to ITU recommendation G.994.1, said first upstream handshake initiation signal and said second upstream handshake initiation signal are R-TONES-REQ signals according to ITU recommendation G.994.1.

8. A transceiver unit according to claim 2, characterized in that said transceiver unit is a digital subscriber line transceiver unit, and in that said first downstream handshake initiation signal and said second downstream handshake initiation signal are C-TONES signals according to ITU recommendation G.994.1, said first upstream handshake initiation signal and said second upstream handshake initiation signal are R-TONES-REQ signals according to ITU recommendation G.994.1, and said upstream handshake confirmation signal is a R-TONE1 signal according to ITU recommendation G.994.1.

9. A transceiver unit according to claim 2, characterized in that said transceiver unit is a digital subscriber line transceiver unit, and in that said first downstream handshake initiation signal and said second downstream handshake initiation signal are C-TONES signals according to ITU recommendation G.994.1, said first upstream handshake initiation signal and said second upstream handshake initiation signal are R-TONES-REQ signals according to ITU recommendation G.994.1, and said

upstream handshake confirmation signal is a R-FLAG1 signal according to ITU recommendation G.994.1.